

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent
appln. of: Keith C. Hong, et al.

Appln. No.: 10/600,847

Filed: June 20, 2003

For: **ALGAE RESISTANT ROOFING GRANULES WITH CONTROLLED
ALGAECIDE LEACHING RATES, ALGAE RESISTANT SHINGLES,
AND PROCESS FOR PRODUCING SAME**

Group Art
Unit: 1762

Examiner: Elena Tsoy

Confirm. No. 8487

Docket No. 008-02

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL PAPER

Dear Sir:

This paper is being submitted in response to the Notification of Non-Compliant Appeal Brief issued earlier today.

Please find enclosed the following for filing in the U.S. Patent and Trademark Office:

1. This transmittal letter;
2. Substitute pages 2-18 for insertion into the appeal brief already on file correcting the statement of the Status of Claims and the headings in the Argument; and
3. A copy of the Notification of Non-Compliant Appeal Brief (37 CFR 41.37).

The Status of Claims has been amended to provide a reference to previously cancelled claims 1, 2, 5, 6, 8, 9, 10, 21, 22-24 and 25.

The headings in the Argument have been amended to conform them to the sections in the Ground of Rejection. References to claim 21 as a rejected claim and/or a claim on appeal have been deleted. Although the Examiner's final rejection referenced claim 21 has a rejected claim, claim 21 had been cancelled prior to the Examiner's final rejection.

No fee is believed to be required. In the event that a fee is required and no fee is provided herewith, the Office is hereby authorized to charge any additional fees, or credit any overpayment, to our Deposit Account No. 16-0750, Order No. 5802.

Respectfully submitted,

January 16, 2008

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Order No. 5802

III. Status of the Claims

Claims 3, 4, 7, 11-20, 23, and 28-41 have been finally rejected.

Claims 26 and 27 were withdrawn as drawn to a non-elected invention.

Claims 1, 2, 5, 6, 8, 9, 10, 21, 22, 24, and 25 have been cancelled.

The claims on appeal are claims 3, 4, 7, 11-20, 23, and 28-41.

IV. Status of Amendments

There were no amendments filed subsequent to final rejection.

V. Summary of the Claimed Subject Matter

How can you keep roofs from turning green with algae growth over a long service life?

In the roofing industry, rock is crushed to a predetermined size, 0.1 micrometer to 40 micrometer (specification, page 5, lines 27-28) for use in preparing the mineral granules that cover the asphalt shingles that cover residential roofs in many parts of our country. The granules are the structure's first line of defense against the elements. Typically, the granules are covered with a thin, highly durable colored ceramic coating, which enhances the appearance of the roof.

In some parts of this country environmental conditions favor the growth of algae on roofs. The algae growth can substantially detract from the appearance. Typically, algae growth is discouraged by incorporating a biocide into the ceramic coating on the granules (page 1, lines 19-24). The biocide slowly leaches out of the coating. However, it is difficult to control leaching from a thin coating, and the available biocide may dwindle to an ineffective level long before the anticipated life of the roof has elapsed.

The present invention addresses the problem by making use of a void-forming material to increase the porosity of an inner coating layer that incorporates biocide (page 2, line 25 - page 3, line 21).

In particular, as embodied in independent claim 3, the presently claimed invention relates to a process for producing algae-resistant roofing granules (specification, page 2, lines 32 - 33). The process includes providing inert base particles and forming first intermediate particles by coating the inert base particles with a first mixture to form a first layer (page 3, lines 1 - 3). The first mixture includes at least one algaecidal material and a void-forming material (page 3, lines 4-5). The algaecidal material comprises cuprous oxide (page 3, lines 24-25). The void-forming material releases gaseous material at temperatures above 90 degrees C and has an average particle size no larger than 2 mm (page 3, lines 7 - 9). The process further includes forming second intermediate particles by coating the first intermediate particles with a second mixture that includes a binder and a coloring material but does not include a void-forming material (page 3, lines 12-17). The process also includes heating the second intermediate particles to release the gaseous material to form pores in the first layer to produce the roofing granules (page 3, lines 18-21). The roofing granules produced by this process inherently have a dark brown color. When the second intermediate particles are heated to cure the coating material, the roofing granules turn dark brown in color from the cuprous oxide (Evidence Appendix, Exhibit A, Declaration Under Rule 132 of Dr. Keith C. Hong, paragraph 4).

As embodied in independent claim 28, the presently claimed invention also relates to a process for producing algae-resistant roofing granules (page 2, lines 32-33). The process includes providing inert base particles and forming first intermediate particles by coating the inert base particles with a first mixture to form a first layer (page 3, lines 1 - 3). The first mixture includes a binder, at least one algaecidal material, and a void-forming material (page 3, lines 4-5). The void-forming material releases gaseous material at temperatures above 90 degrees C and has an average particle size no larger than 2 mm (page 3, lines 7 - 9). The process further includes forming second

intermediate particles by coating the first intermediate particles with a second mixture that includes a binder and a coloring material but does not include a void-forming material (page 3, lines 12-17). The second coating has a thickness of from about 3 micrometers to 25 micrometers (page 8, lines 21-22). The process also includes heating the second intermediate particles to release the gaseous material to form pores in the first layer to produce the roofing granules (page 3, lines 18-21). The relatively thick, pigmented outer layer would inherently mask or hide the inner layer (Evidence Appendix, Exhibit A, Declaration Under Rule 132 of Dr. Keith C. Hong, paragraph 7).

VI. Grounds of Rejection To Be Reviewed On Appeal

A. Claims 3, 4, 7, 11, 16-20, 23, 28-32 and 36-41 were finally rejected as being unpatentable under 35 U.S.C. § 103(a) over U.S. Patent 3,528,842 ("Skadulis") in view of U.S. Patent 4,378,408 ("Joedicke").

B. Claims 3, 4, 7, 11, 16-20, 23, 28-32 and 36-41 were finally rejected as unpatentable under 35 U.S.C. § 103(a) as being unpatentable over Skadulis in view of U.S. Patent 3,918,407 ("Greenberg").

C. Claims 12-13 and 33 were finally rejected as being unpatentable under 35 U.S.C. § 103(a) over Skadulis in view of Joedicke, or Skadulis in view of Greenberg, and further in view of U.S. Patent 3,507,676 ("McMahon").

D. Claims 14-15 and 34-35 were finally rejected as being unpatentable under 35 U.S.C. § 103(a) over Skadulis in view of Joedicke, or Skadulis in view of Greenberg, and further in view of U.S. Patent 4,430,108 ("Hojaji et al.").

VII. Argument

A key issue in this appeal is the correct reading of Joedicke and Skadulis.

The Examiner reads a single sentence in Joedicke literally; but fails to read Joedicke as a whole for what it would impart to one of ordinary skill in the art. Applicants

contend that the correct reading is that which a person of ordinary skill would understand from Joedicke, taken as a whole. Simply put, Joedicke introduces microvoids into the coating layers covering roofing granules for the purpose of scattering light, so as to be able to reduce the amount of expensive white titanium dioxide pigment otherwise required. Applicants contend that one of ordinary skill in the art would understand that it would be useless to introduce microvoids into invisible inner layers, since such layers could not scatter incident light.

Applicants' reading of Joedicke is supported by the evidence of record, namely, the declaration of Dr. Keith Hong (Evidence Appendix, Exhibit A, Declaration Under Rule 132, paragraph 7).

The Examiner focuses on a single sentence in Joedicke that states that "Granules may be coated in one or more coats with any desired amount of coating material and gas forming compound may be used in any one or more of the coatings." (col. 5, lines 38-42). The Examiner reads this to mean that, "according to Joedicke, lightening of roofing granules can be achieved by inclusion of a gas-forming compound into any layer of a multiple layers. Therefore, one of ordinary skill in the art would have reasonable expectation of success in achieving lightened roofing granules by including of a gas-forming compound *either* into a first layer *or* outer layer with no preferences" (sic, Examiner's Action dated July 24, 2007, page 4, second paragraph, emphasis in original).

The Examiner's position is contradicted by of the common sense understanding of one of ordinary skill in the art of the disclosure of Joedicke as a whole.

The Examiner takes a similar incorrect view of Skadulis. The Examiner notes that Skadulis teaches that titanium dioxide may be added to the coating composition to impart the desired color to the coating (Examiner's Action date July 24, 2007, page 4,

last paragraph, referencing col. 3, lines 29-32). From this disclosure, the Examiner takes the position, contrary to common sense, that “[s]ince Skadulis does not say to which layer the pigment should be added, it should be assumed that TiO₂ may be added to any layer” (Id., emphasis in original).

The Examiner’s readings of Joedicke and Skadulis are similar to the PTO’s reading of the Macaulay reference in In re Wright, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989). In that case applicant’s claims included the step of depositing a layer of photosensitive microcapsules in the form of a free-flowing powder. The PTO rejected the claims as obvious over Macaulay, which stated that Macaulay’s invention “does not require an aqueous coating system.” The Federal Circuit reversed, stating that the PTO’s attempt to show that Macaulay suggested the applicant’s invention consisted of taking statements wholly out of context and giving them meanings they would not have had to one skilled in the art having no knowledge of applicant’s invention, or to anyone else who can read the specification with understanding.” 866 F.2d at 426, 9 USPQ2d at 1652. A single line in a reference should not be taken out of context and relied upon with the benefit of hindsight to show obviousness. A reference should be considered as a whole. Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc. 796 F.2d 443, 230 USPQ 416 (Fed. Cir. 1987). It is not permissible to pick and choose from any one reference only so much as will support a given position, and ignore other parts necessary to a full appreciation of what the reference fairly suggests to one of ordinary skill in the art. In re Wesslau, 353 F.2d 238, 241, 147 USPQ 391, 393 (CCPA 1965).

One of ordinary skill in the art, or indeed anyone who has ever redecorated a room with a paintbrush, would understand that Joedicke’s statement that microvoids could be created for the purposes of lightening any *visible* layer. Thus, if a coating were formed from several layers, with the outermost layers not completely opaque, microvoids could be advantageously formed in an inner layer visible through the partially

transparent outer layers, where the microvoids could effectively serve Joedicke's light scattering purpose. The Examiner admitted as much when she construed Skadulis to disclose a transparent outer layer (Examiner's Action dated March 7, 2007, page 7, subsection (B)). When redecorating a room, two or more coats of the new paint may be required to hide the old paint, because each of the new coating layers is partially transparent and the old paint may show through unless the cumulative coating is thick enough to scatter enough incident light so that no significant amount is reflected back from the old paint.

Joedicke discloses a preferred embodiment which is "in accordance with conventional practice," and which, while forming two layers of coating composition on the base granule, employs neither gas forming compounds nor titanium dioxide in the inner layer (col. 5, lines 44-62). Each of the two layers is preferably between 0.01 mm and 0.02 mm thick. One of ordinary skill in the art the outer layer of this preferred embodiment would hide the inner layer from view, so that forming microvoids or adding the light-scattering pigment titanium dioxide would be a futile expense. Similarly, Joedicke '408's only actual examples of the practice of his invention, Trials Nos. 1 and 2 of Example 2, two-coat granules are employed, with the initial coat containing no microvoids (col. 6, line 51 - col. 7, line 38). Joedicke's examples and preferred embodiment are consistent with the common sense understanding of one of ordinary skill in the art that there would be no point in forming microvoids in inner layers that were not visible through outer layers. Similarly, Skadulis does not say that the titanium dioxide should be included in the visible exterior layer or layers because it can be included in any layer, including invisible interior layers, as contended by the Examiner, because one of ordinary skill in the art can be assumed to have a modicum of common sense, and would understand that it would be ineffective and wasteful to include this expensive pigment in an invisible inner layer.

The Examiner's literal reading of the single sentence in Joedicke, and of Skadulis, is wrong because it is inconsistent with the common sense understanding of one of ordinary skill in the art of Joedicke and Skadulis as a whole.

A. The Cited Combination of Skadulis and Joedicke Do Not
Make Out a *Prima Facie* Case of Obviousness with Respect to
Claims 3, 4, 7, 11, 16-20, 23, 28-32 and 36-41

In making her rejection, the Examiner stated that the outer layer of Skadulis carrying no algaecide may be formed as a very thin layer so that it would not cover the color of the first layer (Examiner's Action dated March 6, 2007, page 2, Paragraph 2). This is simply speculation on the part of the Examiner. There is nothing in the reference cited which supports the Examiner's speculation. The Examiner's speculation is contrary to the common sense expectation of one of ordinary skill in the art.

Skadulis does not even discuss forming multiple coating layers, but merely includes three working examples in which two layers were formed. In Example I a first coating composition including rutile titanium dioxide is applied to the base granule and fired to 950 degrees F. After cooling a second coating composition is "applied to the colored pre-coated granules in the mixer, following which the granules were fired to 700 ° F. to insolubilize the silicate coating (col. 4, lines 43 - 46). The second coating composition includes both rutile titanium dioxide and cuprous oxide, so that "[t]he resulting granules had a very slightly reddish off-white color" (col. 4, lines 47-48). In Example II cuprous bromide was substituted for the cuprous oxide of Example I, but there is no disclosure regarding the color of the granules. In Example II, titanium dioxide was omitted from the first coating composition, and cobalt blue stain was added to the second coating composition, so that "[t]he resulting granules were bluish-gray in color . . ." (col. 5, line 32).

There is nothing in Skadulis to suggest it would even be possible to form a transparent outer layer as the Examiner speculates.

In each of the three examples, Skadulis discloses adding titanium dioxide to the outer layer to color the layer. There is nothing in Skadulis to suggest that the titanium dioxide should or could be omitted. In addition, in both layers and in each example, the coating binder is sodium silicate with kaolin clay dispersed therein.

Because Skadulis requires a coating sufficiently porous to permit leaching of metal ions from the granule coating, Skadulis employs as a binder sodium silicate and clay which is fired to a temperature above the dehydration point of the sodium silicate but below the melting point of the clay (col. 3, lines 16 - 32). A discussion of physical changes that occur during the drying and firing of clay is provided in Chapter 4 of D. Rhodes, Clay and Glazes for the Potter (Chilton Book Company, Radnor, PA, 1973, Evidence Appendix, Exhibit B). Skadulis expressly rejects using prior art methods, such as disclosed in U.S. Patent 1,782,649, which provide impermeable glazes (col. 3, lines 54-60). Because Skadulis fires his coatings to temperatures below the melting point of the clay, one of ordinary skill in the art would expect that the clay in the insoluble coatings to be in the form of a light-scattering, crystalline particulate. Contrary to the Examiner's speculation, one of ordinary skill in the art would have no reason to expect that such a coating would become transparent no matter how thinly it is applied. Further, there is nothing in Skadulis which would suggest to one of ordinary skill in the art that the coating composition should be thinly applied. On the contrary, in his examples, Skadulis applies a coating at least thickly enough to result in "colored granules" in every case.

Even if the Examiner's speculation were technically accurate and legally proper, it would not be applicable to applicants' claims 28-41, which require that the second coating have a thickness of from about 2 micrometers to 25 micrometers (independent claim 28).

With respect applicants' argument that one of ordinary skill in the art would not be provided any suggestion or incentive by Joedicke to add gas-forming material to an interior coating layer for a roofing granule where the exterior layer itself contained a significant amount of light-scattering pigment, such as titanium dioxide, the Examiner incorrectly characterized Skadulis as teaching that the appropriate pigments generally metal oxides such as titanium dioxide may be added to any layer (referencing Examples I-III; and column 3, lines 29-32), and also incorrectly stated that they may be added, for example, only to the first layer (referencing Example I) to impart the desired color to the coatings (referencing column 3, lines 29-32).

Skadulis discloses the use of titanium oxide in the inner layer of two of his three examples (I and II), but omits titanium oxide completely from his third example. Nowhere does he say that appropriate pigments may be added to any layer. There is no example of adding titanium oxide only to the first layer, contrary to the Examiner's statement. In Examples I and II titanium dioxide is added to both layers. The "take home" lesson for one of ordinary skill in the art from Skadulis' set of example is that it is not necessary to add any coloring pigment to the inner layer - the third example omits titanium dioxide from the inner layer and yet provides a suitable colored resulting granule. So, why add expensive pigment to the inner layer where it will not be visible? The Examiner's contrary understanding of the significance is not correct.

Regarding applicants' argument that one of ordinary skill in the art would find Joedicke largely irrelevant to the preparation of dark-colored roofing granules, because whereas light- or white-colored roofing granule coatings include materials such as titanium dioxide that reflect light, dark colored roofing granule coatings include material that absorb rather than reflect light, and thus have a dark color, the Examiner misconstrues the significance of the cited references. The Examiner found this argument unconvincing because Skadulis teaches roofing granule coatings having (any)

desired color by addition of metal oxide pigments including titanium dioxide (e.g. light grey color), and that consequently one of ordinary skill in the art would find Joedicke '408 largely relevant to the preparation of light colored roofing granule coatings of Skadulis. Even if this were correct, it is not relevant to applicants' dark colored granules (Claims 3, 4, 7, 11-20, and 23) containing copper. The properly framed issue is not whether Joedicke is relevant to Skadulis, but whether Skadulis and Joedicke are relevant to the presently claimed invention.

The evidence of record is that one of ordinary skill in the art would understand that the formation of microvoids, such as disclosed by Joedicke, for the purpose of lightening the coating of roofing granules, would be detrimental to the appearance of dark colored, copper containing granules, such as those produced by the process claimed in Claims 3, 4, 11-20 and 23 (Evidence Appendix, Exhibit A, Declaration Under Rule 132, paragraph 8). Consequently, Joedicke does not suggest the formation of microvoids in such copper containing roofing granule coatings.

The combination of Skadulis and Joedicke fails to make out a *prima facie* case of obviousness. The rejection over Skadulis in view of Joedicke should be reversed for these reasons.

B. The Rejection of Claims 3, 4, 7, 11, 16-20, 23, 28-32 and 36-41 Over The Combination of Skadulis and Greenberg Should Be Reversed

1. The Cited Combination of Skadulis and Greenberg Is Improper and Cannot Render Claims 3, 4, 7, 11, 16-20, 23, 28-32 and 36-41 Obvious

a. The Secondary Reference Greenberg Is Non-analogous Art

In making her final rejection, the Examiner reconstructs applicants' invention by agglomerating references from two different, unrelated arts. Since the secondary reference the Examiner relies upon is neither in the same field of endeavor (producing roofing granules) nor reasonably pertinent to the problem of providing long term algae

resistance, her rejection is not based on the relevant prior art, and she has not made a *prima facie* case of obviousness. The Board should reverse her rejection for this reason.

Skadulis relates to manufacture of roofing granules. Greenberg relates to the art of controlling fleas on warm blooded animals, such as dogs and cats, by application of an insecticidal gas generation device. Applicants respectfully submit that one of ordinary skill in the roofing granule art would not look to the flea control art to solve the problem of long term algae resistance.

A prerequisite to determining whether a claimed invention would have been obvious to one of ordinary skill in the art in view of the art cited by the Examiner is determining what is "prior art, an issue frequently couched in terms of whether the cited art is "analogous" or too remote to be treated as prior art. In re Clay, 966 F.2d 656, 657, 23 USPQ2d 1058 (Fed. Cir. 1992), citing In re Sovish, 759 F.2d 738, 741, 226 USPQ 771, 773 (Fed. Cir. 1985).

Two criteria can be applied to determine whether cited art is analogous. The first criterion is whether the cited art is from the same field of endeavor, regardless of the problem being addressed by the inventor. The second criterion is whether the reference is still reasonably pertinent to the particular problem being solved by the inventor, assuming the reference is not in the same field of endeavor. In re Clay, 966 F.2d 656, 658-59 (Fed. Cir. 1992), citing In re Deminski, 796 F.2d 436, 442, 230 USPQ 313, 315 (Fed. Cir. 1986); In re Wood, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA 1979).

b. Greenberg Relates to a Different Field of Endeavor

The present invention and Skadulis each relate to the same general field of endeavor - protective granules for roofing.

As stated in the "field of the invention" section of the application on appeal, "[t]he present invention relates to asphalt roofing shingles, protective granules for such shingles, and process for making such granules and shingles" (page 1, line 10-11).

In the same vein, Skadulis et al. states that "[t]his invention relates to inorganic coatings for outdoor surfacing having algicidal and/or fungicidal properties, to articles such as roofing granules coated therewith, and to methods for protecting surfaces from the growth of algae thereon" (col. 1, lines 24-28).

In contrast, Greenberg relates to a wholly different field.

Greenberg, in the field of invention section, states that "[t]his invention relates to the control of fleas on warm blooded animals, such as dogs and cats, by application of an insecticidal gas generator device. More particularly, this invention relates to novel compositions and to methods of manufacture of a pet collar comprised of a synthetic resin such as polyvinyl chloride (PVC) having dispersed therein the insecticide dimethyl 1,2-dibromo-2,2-dichloroethyl phosphate, commonly known as naled." (col. 1, lines 4-12).

One of ordinary skill in the art seeking to make algae resistant roofing granules would not look to the pesticidal pet collar art for guidance.

The Examiner does not attempt to dispute that Greenberg relates to a different field of endeavor.

c. Greenberg Is Not Reasonably Pertinent to the Problem Solved by the Present Invention

The Examiner contends that Greenberg is reasonably pertinent to the particular problem with which applicants were concerned. However, this is not correct.

The particular problem of the present invention at hand involves algae growth on roofs by release of sparingly soluble metal ions. Greenberg does not attempt to resolve any such problem, but rather the problem of continuous release of a volatile gaseous insecticide having a low vapor pressure from plastic flea collars. Because Greenberg substituted "naled," that is, dimethyl-1,2-dibromo-2,2-dichloroethyl phosphate for the DDVP, dimethyl 2,2-dichlorodiviny phosphate, more conventionally used, and because

naled has a lower vapor pressure than DDVP, the rate of release of naled from polyvinylchloride collars was less than the optimum dosage to protect the pet wearing the collar from fleas. Greenberg simply increased the surface area of the collar by adding a "porosity control agent" to make the flea collar surface porous. The present invention addresses an entirely different problem. The initial rate of release of algacidal metal ions is not the problem - but rather obtaining a more effective and efficient use of the algacide so that release can be tailored to specific anticipated environmental situations. Greenberg is simply not at all pertinent to this problem.

The Examiner attempts to bootstrap her position by asserting that the "art of a controlled release of an active substance does not differentiate what is being released from a porous carrier" reciting a wash list of "active substances" recited in U.S. Patent 5,876,752 ("Herbig et al.") (Examiner's Action dated July 24, 2007, page 6, first paragraph). The Examiner reasoning here is not correct. Herbig et al. discloses a very special kind of "porous carrier," namely "a tablet, capsule or bead for administration to a mammal which releases one or more pharmaceutically active substances into said animal over an appreciable time interval which comprises a core of said active substance or substances, with or without one or more pharmaceutically acceptable excipients, said core being surrounded by a porous substructure and one or more IF (i.e. "interfacially polymerized") membranes" (col. 2, lines 24 - 31). Now while it may be that controlled release capsules including "a porous substructure" and "one or more interfacially polymerized membranes" are indifferent as to what is being released, as the Examiner appears to conclude from the wash list. However, there is no logical reason to believe that this peculiar property of these special controlled release structures is generally true of the rest of the extensive "art of controlled release of an active substance." In addition, the Examiner's characterization is likely wrong even if limited to Herbig et al. One of ordinary skill in the art would understand from Herbig et al. that the

active substances in the wash list are not like variously colored marbles falling through a sieve. One of ordinary skill in the art would expect the possibility of unique chemical and physical interactions between the release structure and the active substance, based on fundamental chemical principles. The "principle" the Examiner relies upon contradicts common sense. Herbig et al. is currently classified in class 424, subclass 473, the triple dot-indented subclass being defined as "drug, bio-affecting and body treating compositions, preparations characterized by; special physical form; tablets, lozenges, or pills; sustained or differential release type; layered unitary dosage forms; with porous, perforated, apertured, or sieved layer (e.g., dialyzing layer, microporous layer, etc.)." This is far removed from roofing granules, and one of ordinary skill in the art of preparing roofing granules would have little expectation of finding anything relevant to his or her problems in such art.

The Examiner's citation of Greenberg contradicts the Federal Circuit's admonition to the PTO "that it is necessary to consider the 'reality of the circumstances' - in other words, common sense - in deciding which fields a person of ordinary skill would reasonably be expected to look for a solution to the problem facing the inventor." In re Bigio, 381 F.3d 1320, 1326, 72 USPQ2d 1209 (Fed. Cir. 2004), citing In re Oetiker, 977 F.2d 1443, 1447, 24 USPQ2d 1443 (Fed. Cir. 1992). In the Oetiker case, the applicant claimed an improvement in a hose clamp which differed from the prior art in the presence of a pre-assembly "hook" which maintained the pre-assembly condition of the clamp and disengaged automatically when the clamp was tightened. The Board had relied upon a reference which disclosed a hook and eye fastener for use in garments, reasoning that all hooking problems are analogous. The Federal Circuit held the reference was not within the field of applicant's endeavor, and was not reasonably pertinent to the particular problem with which the inventor was concerned because it had not been shown that a person of ordinary skill, seeking to solve a problem of fastening a

hose clamp, would reasonably be expected or motivated to look to fasteners for garments. Here there is no showing why one of ordinary skill in the roofing granule art would look to the pet collar art for guidance.

Similarly, Greenberg is presently classified in U.S. class 119, "animal husbandry." The present application has been classified in U.S. class 52, "static structures (e.g., buildings)." These arts are wholly unrelated. The Examiner argues that it is well settled that references do not have to be classified by the PTO in the same class to be pertinent, citing In re Mlot-Fijalkowski, 213 USPQ 713 (CCPA 1982) (Examiner's Action dated July 24, 2007, page 9, first paragraph). However, applicants merely contend that the difference in classification is some evidence that Greenberg is not pertinent to the problem addressed by applicants.

Greenberg is not analogous prior art. This rejection should be reversed for this reason.

2. The Combination of Skadulis and Greenberg Does Not Make Out a *Prima Facie* Case of Obviousness with Respect to Claims 3, 4, 7, 11, 16-20, 23, 28-32 and 36-41

As in the case of the first rejection entered under Section 103(a), even if all the art relied upon by the Examiner were actually analogous art, the combination proposed by the Examiner fails to make a *prima facie* case of obviousness.

Even if Greenberg were part of the content of the relevant prior art, the Examiner's suggested combination with the Skadulis would not render the presently claims obvious. Greenberg solves his (unrelated) problem by increasing the surface porosity of the flea collars (col. 5, lines 17-28): "The main function of the additive is to provide a surface porosity which preferably includes pores extending part way down into the body of the collar." This is achieved by employing an additive which has a boiling point at or below the curing temperature of the polyvinylchloride resin. Adding some low boiling additive to increase the surface porosity of roofing granules would not provide the

presently claimed invention - the porosity of the outer layer that forms the surface would be increased - not that of the inner layer. Thus, the combination of Skadulis and Greenberg does not even meet the limitations of applicants' presently claimed invention, but rather teaches one of ordinary skill in the art away from that invention. The combination of Skadulis and Greenberg fails to establish a *prima facie* case of obviousness.

The Examiner has failed to make out a *prima facie* case of obviousness with respect to Claims 3, 4, 7, 11, 16-20, 23, 28-32 and 36-41, and this rejection should be reversed for this reason.

C. The Cited Combination of References Do Not Make Out a *Prima Facie* Case of Obviousness with Respect to Claims 12, 13 and 33

Claims 12, 13 and 33 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Skadulis in view of Joedicke, or Skadulis in view of Greenberg, and further in view U.S. 3,507,676 ("McMahon"). As in the case of the first and second rejections entered under Section 103(a), even if all the art relied upon by the Examiner were actually analogous art, the combination proposed by the Examiner still fails to make a *prima facie* case of obviousness.

Even were the references combined as suggested by the Examiner, there would be nothing to teach or suggest to one of ordinary skill in the art to include void-forming material in the inner coating layer but not in the outer coating layer of roofing granules containing cuprous oxide, or to the inner coating layer of roofing granules have an opaque outer layer. McMahon does not add anything to the combination of Skadulis in view of Joedicke in this regard, or to Skadulis in view of Greenberg.

The Examiner contends that Skadulis broadly teaches that titanium dioxide may be added to any layer, and that Joedicke '408 teaches that lightening of roofing granules can be achieved by inclusion of a gas forming compound into any layer of a roofing

granule coating having multiple layers (Examiner's Action dated July 24, 2007, page 8, third paragraph). This is not correct. One of ordinary skill in the art, applying common sense to Joedicke's and Skadulis' disclosures, would understand that a roofing granule coating could not be lightened by adding titanium dioxide pigment to, or by forming microvoids in, invisible inner coating layers.

The cited combination of references thus does not establish a *prima facie* case of obviousness in respect of the presently claimed invention, as claimed by Claims 12, 13 and 33. There is nothing that discloses or would suggest the presently claimed process to one of ordinary skill in the art. The Examiner's rejection of claims 12, 13 and 33 should be reversed by the Board for this reason.

D. The Cited Combination of References Do Not Make Out a *Prima Facie* Case of Obviousness with Respect to Claims 14-15 and 34-35

Claims 14-15 and 34-35 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Skadulis in view of Joedicke, or Skadulis in view of Greenberg, and further in view of U.S. Patent 4,430,108 ("Hojaji"). As in the case of the first, second, and third rejections entered under Section 103(a), even if all the art relied upon by the Examiner were actually analogous art, the combination proposed by the Examiner still fails to make a *prima facie* case of obviousness.

Applicants contend that Hojaji does not supply the teaching or suggestion missing from the combination of Skadulis and Joedicke, or of Skadulis and Greenberg, that void-forming material be included in the inner layer composition but excluded from the outer layer composition in either a composition including cuprous oxide or a roofing granule with an opaque outer layer. Consequently, the cited combination of prior art references does not make a *prima facie* case of obviousness of the claims as presently amended.



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Please find below and/or attached an Office communication concerning this application or proceeding.

**Notification of Non-Compliant Appeal Brief
(37 CFR 41.37)**

Application No.

10/600,847

Applicant(s)

HONG ET AL.

Examiner

E. Tsoy

Art Unit

1762

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

The Appeal Brief filed on 12 December 2007 is defective for failure to comply with one or more provisions of 37 CFR 41.37.

To avoid dismissal of the appeal, applicant must file an amended brief or other appropriate correction (see MPEP 1205.03) within **ONE MONTH or THIRTY DAYS** from the mailing date of this Notification, whichever is longer.
EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136.

1. ☐ The brief does not contain the items required under 37 CFR 41.37(c), or the items are not under the proper heading or in the proper order.
2. ☒ The brief does not contain a statement of the status of all claims, (e.g., rejected, allowed, withdrawn, objected to, canceled), or does not identify the appealed claims (37 CFR 41.37(c)(1)(iii)).
3. ☐ At least one amendment has been filed subsequent to the final rejection, and the brief does not contain a statement of the status of each such amendment (37 CFR 41.37(c)(1)(iv)).
4. ☐ (a) The brief does not contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings, if any, by reference characters; and/or (b) the brief fails to: (1) identify, for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function under 35 U.S.C. 112, sixth paragraph, and/or (2) set forth the structure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings, if any, by reference characters (37 CFR 41.37(c)(1)(v)).
5. ☒ The brief does not contain a concise statement of each ground of rejection presented for review (37 CFR 41.37(c)(1)(vi)).
6. ☒ The brief does not present an argument under a separate heading for each ground of rejection on appeal (37 CFR 41.37(c)(1)(vii)).
7. ☐ The brief does not contain a correct copy of the appealed claims as an appendix thereto (37 CFR 41.37(c)(1)(viii)).
8. ☐ The brief does not contain copies of the evidence submitted under 37 CFR 1.130, 1.131, or 1.132 or of any other evidence entered by the examiner and **relied upon by appellant in the appeal**, along with a statement setting forth where in the record that evidence was entered by the examiner, as an appendix thereto (37 CFR 41.37(c)(1)(ix)).
9. ☐ The brief does not contain copies of the decisions rendered by a court or the Board in the proceeding identified in the Related Appeals and Interferences section of the brief as an appendix thereto (37 CFR 41.37(c)(1)(x)).
10. ☒ Other (including any explanation in support of the above items):

c(3) The status of all claims has not been identified.

c(6) The brief does not contain a concise statement of each ground of rejection presented for review (claim 21 is canceled).

c(7) The argument section must match the grounds section inasmuch as each grounds corresponds to a heading within the argument section.

The entire brief is not required, only the sections that were found defective.


DARLENE BROWN
PATENT APPEAL CENTER SPECIALIST